its effect on polarised light reflected from small polished plane faces at various positions of the surface. The results obtained were at once a beautiful test of the theory of magnetic induction and an elucidation of the laws governing the Kerr phenomenon.

Another line of research which engaged Dr. Du Bois's attention, and on which he submitted a note before the British Association in 1892, was the action of thin wire gratings upon transmitted light and other forms of radiant energy. In association with Rubens he published two papers on this subject (*Ann. d. Phys. u. Chemie,* 1892, 1893). Dr. Du Bois also gave close study to the phenomena of magnetic screening, and communicated a series of instructive articles full of research to the *Electrician* (vols. xl. and xli., 1898). Much of his own work, as well as that of his contemporaries, will be found embodied in his book on "The Magnetic Circuit in Theory and Practice" (German edition, 1894; English edition by Dr. Atkinson, 1896). There is probably no other work in which the theoretical and practical aspects of magnetism are so ably welded together as in this important contribution to scientific literature. In Prof. Gray's review in NATURE of February 24, 1898, it is stated that the book "cannot be praised too highly as a piece of work sound from every point of view."

Dr. Du Bois did his earlier work in Strasburg University, but for many years he carried on investigations in his own private laboratory in Berlin. At the time of his death he had returned to his native land and was beginning his work at the new Bosscha laboratory at Utrecht. He was a frequent visitor at the British Association meetings in this country, and his tall, handsome figure and charming personality will long be remembered among his many friends. C. G. K.

NOTES.

WE understand that Sir Lazarus Fletcher will retire from the directorship of the Natural History Museum, under the age limit, on March 31. The office was made in 1856, under the style of Superintendent of the Natural History Departments, so that the Trustees of the British Museum might obtain the services of Sir Richard Owen, who supervised the planning of the new museum at South Kensington, and retired shortly after its completion in 1884. Under the style of director, Sir William Flower succeeded Sir Richard Owen, and he retired in 1898. For the next decade Sir E. Ray Lankester was director, and he was followed by Sir Lazarus Fletcher early in 1910. The task now falls on the Trustees of finding a worthy successor who shall maintain the high prestige of the museum among the corresponding institutions of the world. Public interest in the promotion of pure science has never been keener than at present, and naturalists will await with unusual eagerness the announcement of this new appointment.

FROM the *Times* of January 20 we learn that the Prime Minister is to receive a deputation which will put before him the case for a separate Ministry of Fisheries. We hope this deputation will get a more favourable reception than the one that waited on Mr. Prothero on November 27 last, and that it will not repeat the mistake made on that occasion, when it seemed to be taken for granted that the Minister had mastered the elaborate memorandum prepared by the National Sea Fisheries Protection Association, and that, in consequence, it was not necessary for the speakers to deal with the things that really mattered.

THE Conjoint Board of Scientific Societies has commenced the publication of a fortnightly Bulletin of Scientific and Technical Societies, giving a diary of forthcoming meetings, with titles of papers and discussions, together with a list of the constituent societies of the Board and their presidents. The Bulletin will prove a very convenient guide to scientific meetings being held day by day, and by issuing it the Conjoint Board is appropriately promoting the coordination of effort which is one of its main purposes.

CHEMISTS, especially those who have been engaged under the Ministry of Munitions, will be interested to learn that on the cessation of hostilities a letter of congratulation was addressed to Mr. K. B. Quinan, of the Munitions Explosives Department, by the president and secretary of the Institute of Chemistry, expressing on behalf of the fellows and associates their high appreciation of Mr. Quinan's services during the war. Apart from the fact that the great organisation developed for the production of explosives contributed very substantially to the success of the Allied arms, the institute recognises that through the technical training initiated by Mr. Quinan many chemists have gained experience which will prove of great benefit to them and to chemical industry when they come to devote their energies to the furtherance of the arts of peace.

DR. J. D. FALCONER, lecturer in geography in Glasgow University, who has been serving as a political officer in Nigeria since 1916, has been granted further leave of absence by the University Court, at the request of the Secretary of State for the Colonies, in order that he may act as the first director of the Geological Survey of Nigeria.

THE *Times* announces that Dr. F. G. Cottrell, chief metallurgist of the United States Bureau of Mines, who discovered a new process for extracting helium from natural gas, has been awarded the Perkin medal for distinguished services in applied chemistry by the American Chemical Society.

PROF. MARTY, whose death at the ripe age of eighty-four was recorded a short time ago, was a member of the Académie de Médecine, and to a past generation was well known in France as a pioneer of hygiene and food chemistry. Much of his work was carried out for the information of the military authorities in safeguarding the health of the French Army. For this purpose Prof. Marty made numerous analyses of the water supplied to military hospitals, and also of the beverages and foods used. He gave special attention to the subject of "plastered" wines and to the sophistication of wine with coal-tar colours and salicylic acid. One result of Prof. Marty's studies was the fixing of a limit (2 grams per litre) for the quantity of potassium sulphate to be permitted in French wine; since 1880 this limit has been generally adopted in other wine-producing countries. Working with a coadjutor, he showed that hydrocyanic acid was present in tobacco smoke, and he also investigated the antiseptic action of air charged with phenol vapour as used in Lister's spray treatement. Many contributions from Prof. Marty's pen, dealing with the chemistry of coffee, chocolate, water, and spirituous beverages, appeared in the "Traité d'Hygiène" of Michel-Lévy.

The Republic of Brazil has lost one of its most enlightened benefactors by the death of Dr. Rodrigues Alves, aged seventy years. Dr. Alves was born at San Paulo, and devoted his life to the public service. He appreciated fully the necessity of applying the discoveries of science to the welfare of a community living in the tropics, and when he was President of Brazil from 1902 until 1906 he so improved the sanitary condition of the ports that yellow fever was banished from them and they became comparatively healthy. Those especially who remember Rio de Janeiro at the end of last century, and also know its present condition, can realise the importance of Dr. Alves's reforms. To promote an adequate circulation of air, he caused a wide thoroughfare to be cut through the densest part of the old city. Swamps and waste ground, particularly on the margin of the bay, were transformed into dry promenades and fine gardens. Main drainage was attended to, and a sanitary service was established to undertake, among other duties, the pouring of oil on stagnant water. The intellectual life of the people was also fostered by the building of a national library and a national art gallery. Dr. Alves was elected for a second time as President last year, but failing health, unfortunately, compelled him to resign soon after this unique compliment had been paid to him by his grateful country.

We regret to notice the announcement of the death on January 13, in his seventy-fifth year, of Dr. W. Marshall Watts, who was well known for his valuable contributions to the literature of spectroscopy. Dr. Watts was educated at Owens College, Manchester, where he studied under Sir Henry Roscoe, and he afterwards worked for some time in Bunsen's laboratory at Heidelberg. For thirty-three years he was science master at Giggleswick Grammar School, and after spending the early years of his retirement near London he removed to Southend, where he died. It was doubtless his association with Roscoe and Bunsen during the early development of spectrum analysis which led Dr. Watts to devote himself to the advancement of this subject. He made several original investigations, especially in connection with the spectra of compounds of carbon, but he will be best remembered for his "Index of Spectra," which first appeared modestly as a single volume, and has since been supplemented from time to time by a large number of appendices. The selection and arrangement of the data for these publications were made with excellent judgment, and the tables have greatly facilitated the work of investigators in this branch of science. Dr. Watts will also be gratefully remembered by many workers for the kindness with which he was always ready to place his special knowledge at their disposal. In recognition of his services to scientific investigation he was awarded a Civil List pension three years ago.

We regret to notice the death of Prof. Gustave Bouchardat, which occurred recently in Paris. Prof. Bouchardat was formerly professor of hydrology and mineralogy in the Paris School of Pharmacy, and retired from this position some six years ago. His name has long been associated with the literature of synthetic rubber, a paper of his on this subject having appeared (in the *Comptes rendus*) so long ago as 1875. Camphor and borneol were some of the chief matters to which he had devoted attention, especially as regards the synthetic borneols and *iso*borneols. The action of acids on various terpenes was also a subject which he investigated. Prof. Bouchardat was born in 1842, and had been connected with the School of Pharmacy for about forty years.

By the death, at the age of seventy-four, of Sir Gooroo Dass Banerjee, India has lost one of the most distinguished and universally respected Bengalis of our day. After a distinguished career at the Presidency College, Calcutta, Sir Gooroo Banerjee became a Vakil of the Calcutta High Court, and took an active share in the business of the city municipality. After holding a seat in the local legislature, he was raised to the High Court Bench, where he established his reputation as a sound lawyer. He was a member of the council of the Calcutta University, of which he acted as Vice-Chancellor, and he served on Lord Curzon's University Commission, to the report of which he contributed a characteristically independent note of dissent. He was a learned investigator of Hindu mathematics and Indian law and sociology—subjects dealt with in a long series of books. He combined plain living with high thinking to an exceptional degree. Sir Gooroo Banerjee has left four sons, all of whom hold high positions in the public life of Bengal.

The death is announced of Mr. W. P. G. Graham at the age of fifty-seven. Mr. Graham entered the Royal Army Medical Corps in 1887, joined the Egyptian Army in 1890, served in the Tokar campaign of 1891, and in 1896 volunteered his services during the serious outbreak of cholera, after the cessation of which he accepted a post in the Egyptian Civil Service. In 1902 Mr. Graham was selected to reorganise the municipality of Alexandria, and for two years acted as administrator of that city. He then returned to Cairo, and was Director-General of Public Health in Egypt from 1907 to 1914, during which period he installed a water supply for Cairo and did much for the health of the country. Mr. Graham retired from the Egyptian Civil Service in 1914, and became an inspector of the Home Office under the Vivisection Act. In 1915 he took out Lady Wimborne's hospital to Serbia, with which he worked for some months. He was then sent by the War Office to Egypt, but an accident necessitated his return home after a short time, and he resumed his work under the Home Office.

The cultivation of fungi by termites in their nests to serve as food for their young and for the queen is well known, and good accounts of the nests and their fungi have been given by Mr. T. Petch in the Annals of the Botanic Gardens, Peradeniya, in 1906 and 1913. A further paper on the fungi of termite-nests has now appeared in the Philippine *Journal of Science* (vol. xiii., sect. C, No. 4, 1918) by Mr. W. H. Brown. Mr. Brown's account is illustrated by two good plates showing the termite nests, the combs composed of small balls closely packed together and made apparently from the excrement of the termites, and the fungi growing on them. The fungi appear to be the same as those found in Ceylon and in the East generally, and are a conidial form, *Aegerita duthei*, which covers the combs thickly; a Xylaria, probably *Xylaria nigripes*, which grows out from the comb and forms a regular tomentum; and an Agaric, *Collybia albuminosa*. The wide distribution of these three fungi in termite nests is remarkable.

The establishment of a French "Kew Gardens" is the text of a leading article in the *Gardeners' Chronicle* of January 4. The famous Jardin des Plantes at Paris has now become enclosed by the growth of the city, and a new site of 1500 acres is proposed in the park of Versailles between the Trianon and the Forest of Marly. The new garden would consist of about 100 acres, devoted to botanical collections, and would in the first place include those subjects which are absent from the original garden in Paris. About 80 acres would be devoted to collections of fruit-trees and 250 acres to flowers and cultivation under glass. In addition, some 80 acres would be set apart for the installation of laboratories and for providing land for experimental purposes. The site suggested would appear to be an ideal one, as the soil is fertile, and the land belongs to the State and offers almost unlimited facilities for expansion. Moreover, there are already at the Trianon considerable collections of trees, dating from the time of Michaux. It might be added that the Trianon is sacred ground for the botanist, for there originated the natural system of classification of Bernard de Jussieu, which was developed by his nephew, Antoine Laurent de Jussieu, and afterwards further elaborated by Augustin Pyrame De Candolle. The system had its birth in the arrangement adopted by Bernard de Jussieu in the Royal Garden at the Trianon. The new project is being actively supported by the powerful French Touring Club.

PROF. H. H. DIXON (Scientific Proceedings of the Royal Dublin Society, vol. xv., p. 431) describes the microscopic characters of forty-five different kinds of timbers which have been classed under the name "mahogany." The name was originally applied to the timber derived from *Swietenia mahagoni* (Cuban, St. Domingo, and Spanish mahogany), a West Indian species, and from *S. macrophylla* (Honduras, Tabasco, and Colombian mahogany), a native of Central America, but it is doubtful if any of the timbers now on the market come from these sources, and certainly most of them do not. C. D. Mell has recently listed sixty-seven species of trees as supplying timbers the characteristics of which sufficiently coincide with the popular idea of mahogany to be marketed as that wood (U.S. Dept. of Agriculture, Bull. 474, February, 1917), and this list might be added to from our present knowledge. The mahoganies come from all parts of the tropics, and belong to very different families besides the Meliaceæ, to which Swietenia belongs. Prof. Dixon examines in detail the characters of these various timbers, and suggests a definition of mahogany to include all red or red-brown timbers in which the fibres of the adjacent layers cross each other obliquely, giving rise to a play of light and shade on longitudinal surfaces, known as "roe," thus greatly emphasising and enhancing the figure. In addition, a mahogany should have scattered wood-vessels, isolated or in small, mostly radial, groups; the parenchyma round the vessels should be narrow and inconspicuous, while the medullary rays are, on the average, well under 2 mm. in height, and not more than nine cells thick. In other respects the woods classed as mahoganies have very various properties; for instance, with regard to density, hardness, presence or absence of year-rings, pore-rings, size and contents of vessels, distribution of parenchyma, etc. Prof. Dixon gives a detailed description of the microscopic characters, and also 138 photomicrographic reproductions with a uniform magnification of 31 diameters.

THE columbines (Aquilegia) of North America form a very interesting group of some twenty-four species, which is described in detail, with good illustrations, in Contributions from the United States National Herbarium (vol. xx., part iv., 1918) by Mr. E. B. Payson. It is in the floral characters that the more interesting features are to be found, and the author draws a phylogenetic chart based on the length of the spurs and the character of the sepals and petals, which is instructive. The flowers in sixteen of the species are nodding with spurs less than 1·5 cm. long, while the remaining species have erect flowers with spurs ranging from 3·5 cm. long to those of *Aquilegia longissima*, which are from 10–15 cm. long. This species is probably the most highly developed in the genus, and is found in South Texas and Mexico. It is of interest to notice that when grown in eastern North America this species will not set seed unless artificially pollinated, which points to the length of spur being correlated with some insect in its native habitat which does not occur in other parts of North America. The author describes three new species and two new subspecies.

ALTHOUGH fungi, both fresh and dried, are largely used in Italian cookery, it would appear that much still remains to be done even in Italy in utilising them for food. The "Federazione Pro Montibus," of which the headquarters are at 113 Via del Seminario, Rome, publishes a pamphlet of twenty pages by Dr. Giulio Trinchieri containing practical instructions for collecting and preserving edible fungi. It is accompanied by illustrations of eight species. Of methods of preservation, drying is the most important, and might with advantage be practised more extensively over here even if only applied to the mushroom of commerce, which often goes to waste for lack of this simple expedient. The use of salt, vinegar, alum, and methods of sterilisation are also mentioned in the present pamphlet, which contains in addition a bibliography of some of the principal Italian books on the subject.

BRAZIL, among other countries, has suffered severely owing to the restriction of exports of coal and other fuel by Great Britain. On the other hand, this embargo has had the effect of directing attention to the vast fuel resources available in that State. Already working operations are in hand in some regions, and, according to the U.S. Commerce Reports, No. 276, various mining companies are being subsidised by the Brazilian Government to stimulate production, and the home-produced supply will be favoured by the authorities whenever possible in the future. Quite high-grade briquettes are being made from coal which has been "purified" by washing and crushing to reduce the ash-content. As regards fuel-oil, the Parahyba shale is reported to be richer than that of Scotland, the former producing 165 litres of crude oil per ton (16½ per cent. oil-content), while the latter produces 100 litres (10 per cent. oil-content). Portions of the shale suitable for distillation have already been found at a number of points. Various companies have been formed, and authorities have reported favourably on the fuel for motor-vehicle and boat driving. Re-afforestation schemes are also proposed for overcoming the fuel shortage, experiments having shown that eucalyptus trees can be successfully grown in Brazil so as to yield wood at the end of five years at a cost of about 3*s.* per cubic metre.

IN papers read before the American Society for Testing Materials recently, Dr. Henry M. Howe and Mr. A. D. Little discussed some aspects of the organisation of industrial research. Dr. Howe divided the four phases of research into selection, planning, execution, and interpretation. In order that all these conditions may be satisfied, there should be a wider appreciation of the exact functions that a research should fulfil and greater co-operation amongst the scientific and technical men and bodies concerned. For the selection of a research, prophecy and breadth of view are essential; planning requires imagination and administration; execution, skill and trustworthiness; and interpretation, a philosophical mind. After enumerating the aims of research organisation, Mr. Little admitted that industry must look to the higher institutions of learning for the determination of fundamental facts and constants, the development of theory, and the establishment of general principles. Research must be given greater prominence at such institutions to enable industry to recruit the proper type of worker for its own research problems. It is desirable to provide technical schools with more experimental plant on an *industrial* scale, so that students from the schools will be able at once to apply their research methods to the requirements of the industrial firm which they enter. In conclusion, Mr. Little emphasised the importance of creating an interest in research problems in the mind of the manufacturer and the public.

PIUTTI, in 1886, pointed out that while *d*-asparagine is sweet, its stereo-isomer, *l*-asparagine, is tasteless. This was the first observation indicating the nature of the connection which may exist between the flavour and the molecular structure or configuration of an organic compound. Since that time a large number of records have been made as to the effect which changes in chemical composition or molecular arrangement bring about in the flavour of organic substances. Thus *d*-leucine and *d*-phenylalanine have been found to be sweetish, whilst their *laevo*-isomers are bitter; and of the anisaldoximes the one with the *anti*-configuration is very sweet, whereas the *syn*-aldoxime is tasteless. The monohydric alcohols are only slightly sweetish, but with increase of the number of hydroxyl groups, as in the glycols, glycerols, etc., the sweetness becomes very marked. On the other hand, the strong sweet taste of "saccharin" is destroyed by relatively slight molecular transformations, such as the replacement of an imide hydrogen atom by a methyl or ethyl group. In the *Revue Scientifique* for December 7, 1918, MM. Barral and Ranc give an interesting summary, ten pages in length, describing the present state of knowledge respecting what may be called the chemistry of sweet flavours. In fine, the known facts, they consider, resolve themselves into a series of approximations to generalisations, but there are always exceptions or anomalies. We are, indeed, still very far from being able to establish a general law, such as would enable the flavour of a compound to be deduced when its molecular structure is known.

CRUDE α-trinitrotoluene, the high explosive, is liable to contain small quantities of its β- and γ-isomers. The three substances are very similar in physical properties, and are equally powerful as explosives. Although the α-variety is by no means a sensitive explosive, some accidents have occurred with it which have not been satisfactorily explained, but which have indicated that the substance may sometimes contain a much more sensitive body. It has generally been supposed that the latter is derived from α-trinitrotoluene, but it may equally well be derived from the β- or the γ-isomer. Messrs. Ryan and O'Riordan (Proceedings of the Royal Irish Academy, December) give an account of an investigation which they have carried out in order to elucidate this question. In the course of their work they found that a sample of crude γ-trinitrotoluene contained a dark, amorphous substance which explodes on heating; this, they think, may be of considerable interest in connection with the explanation of the accidents mentioned.

DR. SIDNEY RUSS suggests a new X-ray unit in radiotherapy. The unit, termed a "rad," is based on the amount of radium which, when applied to malignant tumour cells, causes complete inhibition of their power to grow after an exposure for one hour; this is determined by tests on rat-cancer. For measuring the dose of X-rays administered to a patient, the photographic action of the rays is obtained on a photographic plate, and upon the same plate is impressed the photographic action of the standard radium. The plate is developed and a comparison made between the photographic impressions so obtained. For example, if the X-ray tint for an exposure of ten seconds equalled that obtained with an exposure of six seconds with the radium, the dose of X-rays during the ten seconds' exposure would be 1/600 rad (*Archives of Radiology and Electrotherapy*, No. 221, December, 1918, p. 226).

THE launch of the first large self-propelled seagoing reinforced-concrete vessel to be built in Great Britain—the *Armistice*—took place at the Ferro-Concrete Ship Construction Co.'s yard at Barrow-in-Furness on January 7, and forms the subject of an illustrated article in *Engineering* for January 10. The ship is of 205 ft. length between perpendiculars, 32 ft. moulded breadth, 19 ft. 6 in. moulded depth, and is to have a speed of about 7¾ knots with 400 indicated h.p. Trisec steel bars having a very high tensile strength were used for the reinforcement. The concrete was made up of a granite aggregate, sand, and British standard specification cement. The sand used was a mixture of coarse and fine grains, from ⅛ in. downwards; the aggregate consisted of granite chippings of assorted sizes, not less than ⅛ in. and not more than ½ in. Fresh water was used exclusively for mixing up the concrete. The method used in construction was to build a box round the reinforcement bars, into which the concrete was poured and rammed hard. To reduce the quantity of timber employed a system of steel sheets, suitably stiffened, was used as shutters. The machinery consists of two cylindrical boilers 9 ft. 6 in. in diameter by 9 ft. long, to work at 140 lb. per sq. in. The engines are of the compound surface condensing type, having cylinders 15½ in. and 33 in. in diameter by 24 in. stroke.

IN the *Times* of January 14 there appears an interesting account of the surrendered German ships by a member of the Allied Naval Commission in German waters. The good German shooting is attributed more to superior range-finders and training than to the gunnery control system. The statement that the German ships unquestionably had more accurate range-finders than the British is not accepted by many of those in possession of the facts. It is generally agreed that the first German salvoes were excellent, but not necessarily better than the British, and that, whereas the British fire continued good, the German fire became erratic when the ships were hit. The primary function of a Service range-finder is to provide ranges when in action. It is essential that it should keep in adjustment under battle conditions. To save the reputation of the German range-finder it is necessary to attribute the failure to a peculiar human moral weakness, which, however, was certainly not in evidence throughout the war. As the result of the Battle of Jutland the superiority of British fire was recognised by the Germans, whose later conduct is some proof of this. The superiority of British range-finders was known to the German Government, which in 1914 approached British makers with regard to the supply of their instruments. During repeated competitive trials by the French Government the German range-finders were invariably beaten by the British. This defeat the Germans explained on political grounds, but as the result of extensive trials in Austria-Hungary British instruments were adopted throughout the Austro-Hungarian Navy and largely throughout the Army. These British range-finders which have defeated the German product in so many lands have optical parts made of British glass. No German glass is used, and during the war a considerable amount of excellent optical glass has been made by the range-finder manufacturers themselves.

MR. JOHN MURRAY'S new list of announcements contains the following forthcoming books:—"Travels in Egypt and Mesopotamia in Search of Antiquities, 1886–1913," Dr. E. A. Wallis Budge, 2 vols., illustrated, in which is given the story of the author's missions to Egypt, the Great Oasis, and Mesopotamia, the results of his excavations at Acevân and Nineveh and Der in Babylonia, and particulars of the excavations in Assyria and Babylonia from 1782 to 1913; a new and revised edition of "Heredity," Prof. J. Arthur Thomson, illustrated; "The Adventure of Life," Major R. W. McKenna, R.A.M.C., dealing with the question of the origin of life, and showing that, in the development of higher forms and the "survival of the fittest," intelligence, and not brute strength, has been the dominating factor; and "Hints to Farm Pupils," by E. Walford Lloyd, the aim of which is to put in concise terms the most important features of farming which a pupil must master. The volume will contain a seasonal "Calendar of Farm Work."

OUR ASTRONOMICAL COLUMN.

THE COMET 1786 II.—This comet is of interest as being the first of the eight comets discovered by Miss Caroline Herschel. It was observed for eighty-two days, being visible to the naked eye for a fortnight. The observers were Maskelyne (Greenwich), Wollaston (Chislehurst), Méchain and Messier (Paris), and Reggio and Cesaris (Milan). Miss Margaret Palmer, who has made a re-investigation of the orbit (*Astr. Journ.*, No. 744), finds the following ellipse as the most probable orbit:—

$$\begin{array}{l} T = 1786 \text{ July } 7{\cdot}91859 \text{ Berlin M.T.} \\ \left.\begin{array}{l} \omega = 324^\circ\ 57'\ 59{\cdot}23'' \\ \text{☊} = 194^\circ\ 27'\ 11{\cdot}37'' \\ i = 50^\circ\ 55'\ 5{\cdot}97'' \end{array}\right\} 1786{\cdot}0 \\ \log q = 9{\cdot}6128774 \\ \log e = 9{\cdot}9995992 \\ \text{Period} = 9373 \text{ years.} \end{array}$$

The observations are fairly satisfied by orbits ranging from an ellipse with period 3300 years to a parabola. Perturbations by Mercury, Venus, the earth, and Jupiter have been applied.

PARALLAX OF THE BARNARD STAR.—*Astr. Nach.* (No. 4971) contains a determination of the parallax of this star, made by photography at Pulkova by Dr. S. Kostinsky. He finds $0{\cdot}622'' \pm 0{\cdot}022''$, a larger value than those found in America, which group themselves about $0{\cdot}53''$. He gives for the proper motion in R.A. $-0{\cdot}0438$s., in decl. $+10{\cdot}249''$. Place at epoch 1917·473 17h. 53m. 46·456s., $+4^\circ\ 27'\ 57{\cdot}28''$ (equinox of 1917·0). Photographic magnitude, 10·6; photovisual (with yellow filter), 9·4

THE BRITISH SCIENCE GUILD AND ITS EXHIBITIONS.

AT a dinner given at Princes' Restaurant on January 15 several speeches were made concerning the results of the British Scientific Products Exhibition held by the British Science Guild in August and September last, and also the work of the guild for the advancement of science and its application to industry.

The Marquess of Crewe, president of the exhibition committee, was in the chair. After the usual loyal toasts he proposed "The British Science Guild," alluding to the valuable educational work which it had conducted since its foundation in 1905. The war had brought home to everyone the value of scientific method and knowledge, not only as a weapon in war, but also in industry and education. In these respects our adversary Germany had truly eaten of the tree of knowledge, but that fruit had turned to poison because of the spirit in which it was eaten. Our task must be to dissociate science from this disastrous spirit, to show that the proper applications of science, pursued with reverence and humanity, added immensely to the happiness of mankind. The guild had pursued two main objects, which were, however, closely related. It desired, first, to secure fuller attention to science in the general education of youth. While a sound general education was necessary as a preliminary to technical specialisation, this general education should contain a fair proportion of scientific studies. The second object of the guild was to promote the higher branches of scientific research and to encourage their application to industry. As the Minister who brought into being the Department of Scientific and Industrial Research, he observed with pleasure the closer relations being established between science and industry and the growing recognition of the benefits of industrial research—results which were due, in a large measure, to the influence of the British Science Guild. The exhibition had proved a wonderful revelation of the possibilities of science. He hoped that it would be a permanent feature in the industrial life of the country, and that in future the guild would continue to flourish and play its part in the advancement of learning and science.

Lord Sydenham, who replied on behalf of the British Science Guild, referred to some of the difficulties encountered at the outbreak of war. For a long time we were dependent upon improvisation for articles urgently needed by the Army, Navy, and Air Service, and it was due to the efforts of British men of science that these needs had been met. Lord Sydenham proceeded to mention various instances of discoveries made in this country but afterwards developed abroad. Perkin's discoveries in relation to dyes furnished a well-known example. Helium gas was first discovered in the sun by Sir Norman Lockyer, and twenty-six years later was identified on the earth by the late Sir William Ramsay, these two distinguished men being the founders of the guild. The Americans are now producing it in large quantities as a non-inflammable gas for the inflation of airships. The British Science Guild aimed at the co-ordination of science, education, and industry. The British Scientific Products Exhibition had shown what British men of science could do. Another exhibition on a larger scale was planned for the present year. In the difficult reconstruction period science and scientific methods of direction in the Government could do a great deal to recreate national prosperity and provide happier and healthier conditions of life.

Mr. F. G. Kellaway, M.P., Parliamentary Secretary, Ministry of Munitions, in proposing "The Exhibitions of 1918 and 1919," said that events during the war had aptly illustrated the romance of applied science Experience belied the idea that John Bull was a sluggish and lethargic person. It would be fitter to apply the description uttered by Milton two hundred and fifty years ago: "A nation that is not slow and dull, but a quick, ingenious, searching spirit, acute at invention." In proof of this he would mention two inventions relating to defence against hostile air-